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ASSIGNMENT BOOKLET

3216 MATHEMATICS 33 UNIT 5

FOR STUDENT USE ONLY

Date Module Submitted

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Assigned Teacher: _____

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ALBERTA DISTANCE LEARNING CENTRE

MAILING INSTRUCTIONS FOR CORRESPONDENCE LESSONS

1. BEFORE MAILING YOUR LESSONS, PLEASE SEE THAT:

(1) All pages are numbered and in order, and no paper clips or staples are used.
(2) All exercises are completed. If not, explain why.
(3) Your work has been re-read to ensure accuracy in spelling and lesson details.
(4) The Lesson Record Form is filled out and the correct lesson label is attached.
(5) This mailing sheet is placed on the lesson.

2. POSTAGE REGULATIONS

Do **not** enclose letters with lessons.

Send all letters in a separate envelope.

3. POSTAGE RATES

First Class

Take your lesson to the Post Office and have it weighed. Attach sufficient postage and a green first-class sticker to the front of the envelope, and seal the envelope. Correspondence lessons will travel faster if first-class postage is used.

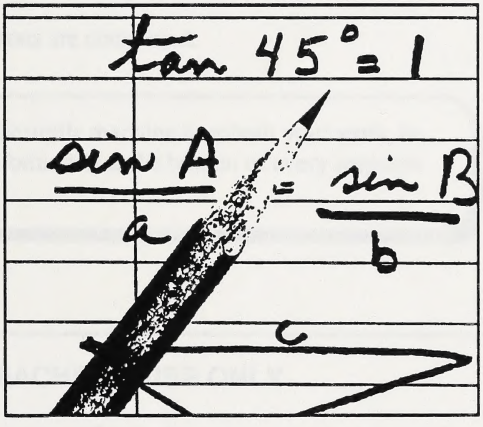
Try to mail each lesson as soon as it has been completed.

When you register for correspondence courses, you are expected to send lessons for correction regularly. Avoid sending more than two or three lessons in one subject at the same time.

St. Serv. 9-91

MATHEMATICS 33

Trigonometry



Unit 5

Assignment Booklet

Distance Learning

Alberta EDUCATION

Mathematics 33
Assignment Booklet
Unit 5
Trigonometry
Alberta Distance Learning Centre
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Your mark on this unit will be determined by how well you answer the questions in this booklet.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate topic.

The three topics that you studied in your unit are covered in this assignment booklet. The total value of these topics is 100 marks. Each topic is divided into several questions. The value of each question is stated in the left margin.

Be sure to proofread each answer carefully.

Do not hand in this booklet until all questions are completed.

Faxing?

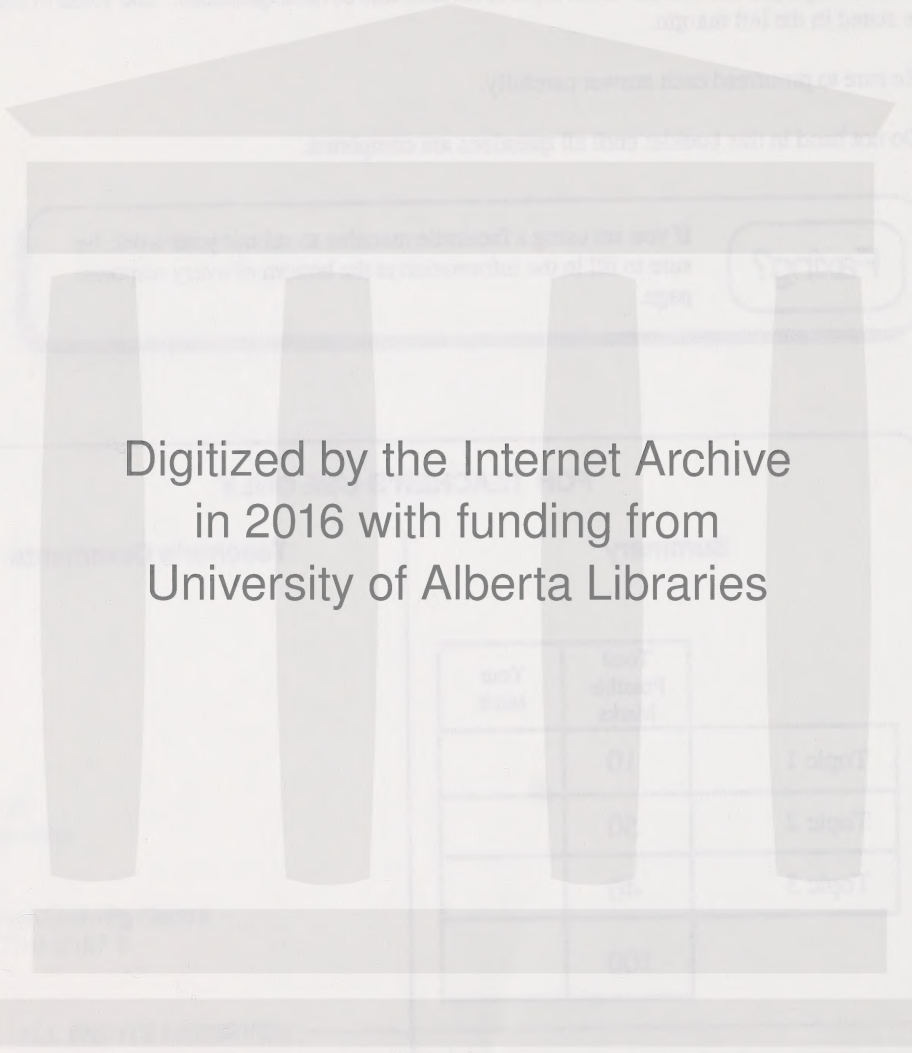
If you are using a facsimile machine to submit your work, be sure to fill in the information at the bottom of every response page.

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Topic 1	10	
Topic 2	50	
Topic 3	40	
	100	

Teacher's Comments



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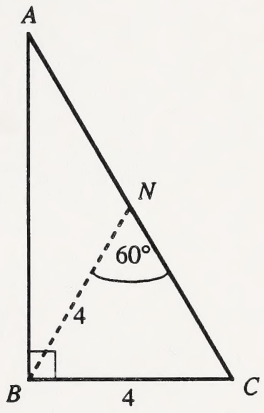
Topic 1: 45° - 45° - 90° and 30° - 60° - 90° Triangles

(8)

1. ABC is a right triangle, where $BN = BC = 4$. If $\angle BNC = 60°$, find the measures of the following. (Note that $\angle$ = angle.)



a. AB

b. AC

c. AN

d. $\angle ABN$

Name of Student _____ Student I.D. # _____

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(2)

2. If the measures of the sides of a triangle are $\frac{3}{2}$, $\frac{3}{2}$, and $\frac{3\sqrt{2}}{2}$ respectively, what are the measures of its angles?

Topic 1

_____ marks

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

Topic 2: Trigonometric Ratios in the Coordinate Plane

(2)

1. Angles with the same initial sides and the same terminal sides are said to be

   A. collinear

   B. coterminal

   C. concurrent

   D. equal

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(8)

2. Draw a diagram to show in which quadrant the terminal arm will lie for the following angles.

a. $-179°$

b. $183°$

c. $484°$

d. $-425°$

Name of Student _____ Student I.D. # _____

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(5)

3. If $\tan \theta = \frac{8}{15}$, what is the value of the following? Show all your work.

   a. $\sin \theta$

   b. $\cos \theta$

Name of Student _____ Student I.D. # _____

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(5)

4. Find the primary ratios for an angle θ when its terminal arm passes through the point $P(-5,-12)$. Then find θ.

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(4)

5. Use a scientific calculator to find the following. Round your answers to four decimal places.

   a. cos 42.4°

   b. tan 75.75°

Name of Student _____ Student I.D. # _____

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(6)

6. Point $P(2.7, 3.3)$ is in the first quadrant. If PO forms an angle θ with the x-axis, calculate the following to three decimal places.

   a. cot θ

   b. sec θ

   c. csc θ

Name of Student _____ Student I.D. # _____

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(2)

7. If $\cos \theta = 0.9905, 0 < \theta < 90°$. What is the value of θ?

A. $-7.6°$

B. $7.7°$

C. $-7.8°$

D. $7.9°$

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

(5)

8. If $\sin \theta = -\frac{5}{13}$ and $\cos \theta$ is negative, do the following.

   a. Find $\tan \theta$ to four decimal places.

   b. What is the value of θ? Round your answer to one decimal place.

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(6)

9. A girl is flying a kite with a string that is 155 m long. Assume that the string is straight and the angle of elevation to the kite is 56.5°. If the girl is holding the string from a height of 1.5 m above the ground, calculate the height of the kite.

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(4)

10. Give the exact value of the following.

a. $-\sin -(180°-45°)$

b. $\cos 450°$

c. $\tan -225°$

d. $-\cot(360-240°)$

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(3)

11. Which of the following statements is true for $0 < \theta < 90$?

A. $\sin(180° - \theta) = \sin(180° + \theta)$

B. $\cos(180° - \theta) = \cos(180° + \theta)$

C. $\sin(180° + \theta) = \cos(180° + \theta)$

D. $\cos(180° - \theta) = \sin(180° - \theta)$

Topic 2

_____ marks

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

Topic 3: Sine and Cosine Laws

(5)

1. The angle of depression of a ship from the top of a 47.5 m lighthouse is 33.5°. What is the distance from the ship to the foot of the lighthouse? Round your answer to two decimal places.

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

(5)

2. An 18.4 m oak tree casts a shadow of 25.3 m at 1:00 p.m. What is the angle of elevation of the sun at that time?

   A. 36°

   B. 20°

   C. 18°

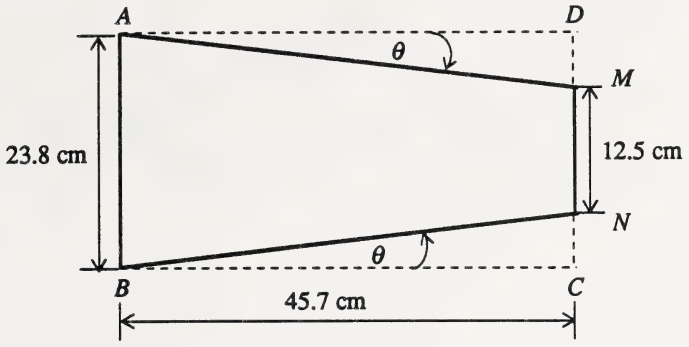
   D. 72°

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

(6)

3. A machinist is making a shaft according to the dimensions shown. What is the measure of the angle θ if $DM = NC$? Give your answer to the nearest degree.

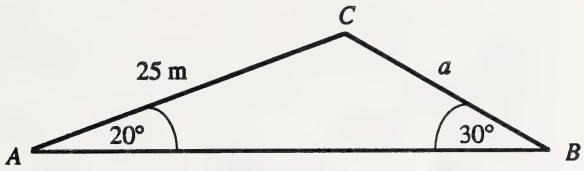


Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

(5)

4. Use the sine law to find the length of BC if $\angle ABC = 30°$, $AC = 25$ m, and $\angle BAC = 20°$. Round your answer to two decimal places.



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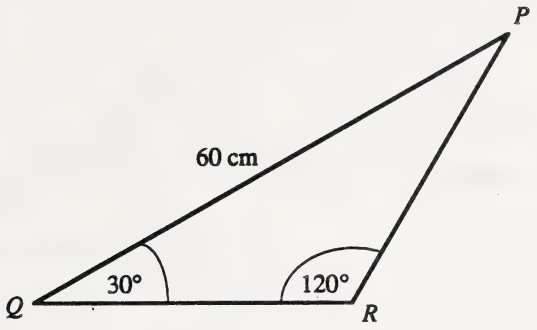
④

5. In ΔPQR, $\angle PQR = 30°$, $\angle PRQ = 120°$, and $PQ = 60$ cm.
Find the measure of the following.



a. PR

b. QR

Name of Student _____ Student I.D. # _____

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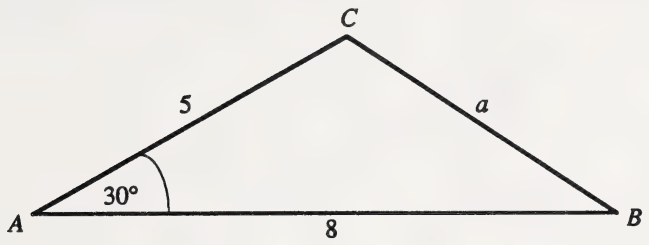
(5)

6. ΔABC is an obtuse triangle, where $AB = 8$, $AC = 5$, and $\angle BAC = 30°$.



Find the measure of the following.

a. BC

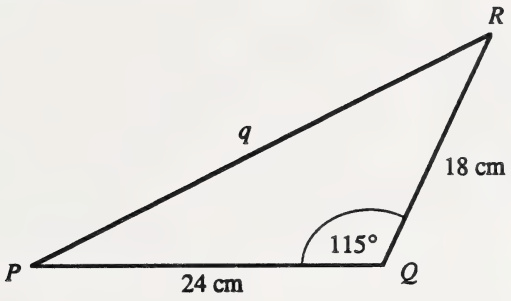
b. $\angle ABC$

Name of Student _____ Student I.D. # _____

Name of School _____ Date _____

(5)

7. If $PQ = 24$ cm, $QR = 18$ cm, and $\angle PQR = 115°$, use the law of cosines to find the measure of the following.



a. PR

b. $\angle RPQ$

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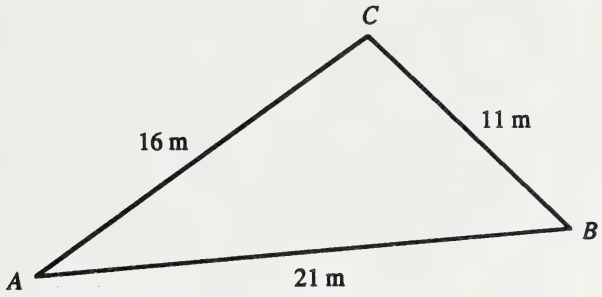
(5) 8. Find $\angle A$ in ΔABC if $AB = 21$ m, $BC = 11$ m, and $CA = 16$ m.



Topic 3

_____ marks

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Name of School _____ Date _____

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